

Customer No.: 31561  
 Application No.: 10/710,820  
 Docket No.: 12419-US-PA

**To the Claims:**

1. (currently amended) A method of expanding an redundant array of independent disks (RAID), wherein the RAID comprises M number of storage devices, and each of the storage devices comprises N number of storage blocks, wherein M is two or more positive integer number and N is a positive integer, which are defined as:

$D_{IJ}$ : the  $J^{\text{th}}$  data block of the  $I^{\text{th}}$  storage device;

$P_{IJ}$ : the  $J^{\text{th}}$  data block of the  $I^{\text{th}}$  storage device, being a parity data block;

wherein, I is a positive integer of  $1 \sim M$ , J is a positive integer of  $1 \sim N$ , and the arrangement order of the storage-devices-parity block is: if  $D_{I,X,Y} = P_{I,X,Y}$ , then  $D_{I+1,J+1,X-1,Y+1} = P_{I+1,J+1,X-1,Y+1}$ , wherein X-1 is an integer in the range of  $1 \sim M$ , and Y+1 is an integer in the range of  $1 \sim N$ , the method comprising:

providing an expansive storage device;

disposing the expansive storage device in front of the  $1^{\text{st}}$  storage devices, wherein the  $\forall J^{\text{th}}$  data block of the expansive storage device is represented as  $D_{0,\forall J}$ ; and

sequentially moving the  $D_{IJ}$  data blocks except  $P_{IJ}$ , wherein I is an integer of  $0 \sim M$ ,  $\forall J$  is a positive integer of  $1 \sim N$ , and if  $D_{X,Y} = P_{X,Y}$ , then  $D_{X-1,Y+1} = P_{X-1,Y+1}$ , and wherein X is a positive integer of  $0 \sim M$  when X-1 is an integer in the range of  $0 \sim M$ , and Y+1 is an integer in the range of  $1 \sim N$ .

2. (original) The method of expanding RAID of claim 1, wherein the step of sequentially moving  $D_{IJ}$  further comprises sequentially moving  $D_{IJ}$  in an ascending order based on the sequence of an I value.

Customer No.: 31561  
Application No.: 10/710,820  
Docket No.: 12419-US-PA

3. (original)The method of expanding RAID of claim 1, wherein the step of sequentially moving  $D_{I,J}$  further comprises sequentially moving  $D_{I,J}$  in an ascending order based on the sequence of a J value.

4. (currently amended)A method of expanding an redundant array of independent disks (RAID), wherein the RAID comprises M number of storage devices, and each of the storage devices comprises N number of storage blocks, wherein M is two or more positive integer number and N is a positive integer, which are defined as:

$D_{I,J}$ : the  $J^{\text{th}}$  data block of the  $I^{\text{th}}$  storage device;

$P_{I,J}$ : the  $J^{\text{th}}$  data block of the  $I^{\text{th}}$  storage device, being a parity data block;

wherein, I is a positive integer of  $1 \sim M$ , J is a positive integer of  $1 \sim N$ , and a same  $J^{\text{th}}$  data block in the storage devices comprises at least a parity data block, the method comprising:

providing an expansive storage device;

disposing the expansive storage device in front of the  $1^{\text{st}}$  storage devices, and the  $Y^{\text{th}}$  data block of the expansive storage device is represented as  $D_{0,Y}$ ; and

sequentially moving the  $D_{I,J}$  data blocks except  $P_{I,J}$ , wherein Y is a positive integer of  $1 \sim N$ , and the positions of the parity data block of the same  $J^{\text{th}}$  data block in the storage devices are the same.

5. (original)The method of expanding RAID of claim 4, wherein the step of sequentially moving  $D_{I,J}$  further comprises sequentially moving  $D_{I,J}$  in an ascending order based on the sequence of an I value.

Customer No.: 31561  
Application No.: 10/710,820  
Docket No.: 12419-US-PA

6. (original)The method of expanding RAID of claim 4, wherein the step of sequentially moving  $D_{I,J}$  further comprises sequentially moving  $D_{I,J}$  in an ascending order based on the sequence of a J value.